What We Claim is:

1. A method for selectively enhancing the growth of the population of a dinoflagellate, said method comprising incubating a medium containing at least one dinoflagellate cell in the presence of mimosine or a toxic degradative product thereof.

2. The method of claim 1, wherein said at least one dinoflagellate cell is incubated in the presence of mimosine or 3,4-dihydroxypyridine.

3. The method of claim 1, wherein mimosine or a toxic degradative product thereof is present in said medium at a concentration of from 0.001 mM to 50 mM.

4. The method of claim 1, wherein mimosine or a toxic degradative product thereof is present in said medium at a concentration of from 0.01 mM to 20 mM.

5. The method of claim 1, wherein mimosine or a toxic degradative product thereof is present in said medium at a concentration of from 0.1 mM to 10 mM.

6. The method of claim 1, wherein mimosine or a toxic degradative product thereof is present in said medium at a concentration of from 1 to 5 mM.

7. The method of any one of claims 1 to 6, wherein said dinoflagellate is from a genus selected from the group consisting of *Gymnodinium, Karenia, Prorocentrum, Alexandrium, Symbiodinium, Crypthecodinium, Noctiluca,*

*Gonyaulax, Dinokaryotae, Dynophisys, Protoperidinium, Gyrondium, Amphinidium and Scrippsiella.*

8. A method for obtaining an isolate or culture of a dinoflagellate, said method comprising selecting one or more dinoflagellate cells from a sample, placing said dinoflagellate cell or cells in a growth medium containing mimosine or a toxic degradative product thereof, incubating the mixture thus obtained until cell multiplication of the desired dinoflagellate is evident and, if necessary, transferring the enriched culture to fresh medium containing mimosine or a toxic degradative product thereof and repeating the sub-culturing of said enriched culture, until an isolate or culture of the required purity of the desired dinoflagellate is obtained.

9. The method of claim 8, wherein said one or more dinoflagellate cells is incubated in the presence of mimosine or 3,4-dihydroxypyridine.

10. The method of claim 8, wherein mimosine or a toxic degradative product thereof is present in said growth medium at a concentration of from 0.001 mM to 50 mM.

11. The method of claim 8, wherein mimosine or a toxic degradative product thereof is present in said growth medium at a concentration of from 0.01 mM to 20 mM.

12. The method of claim 8, wherein mimosine or a toxic degradative product thereof is present in said growth medium at a concentration of from 0.1 mM to 10 mM.

13. The method of claim 8, wherein mimosine or a toxic degradative product thereof is present in said growth medium at a concentration of from 1 to 5 mM.

14. The method of any one of claims 8 to 13, wherein from 1 to 3 rounds of transfer and sub-culturing of the desired dinoflagellate are performed.

15. The method of any one of claims 8 to 13, wherein each round of sub-culturing from said transfer to the point where cell multiplication of the desired dinoflagellate is evident is from 3 to 10 days.

16. The method of any one of claims 8 to 13, wherein each round of sub-culturing from said transfer to the point where cell multiplication of the desired dinoflagellate is evident is from 4 to 7 days.

17. A method for isolating one or more cells of a dinoflagellate from a natural aquatic sample, said method comprising adding mimosine or a toxic degradative product thereof to a natural aquatic sample comprising one or more dinoflagellate cells, incubating the mixture thus obtained until cell multiplication of the desired dinoflagellate is evident, and isolating therefrom one or more cells of the desired dinoflagellate.

18. A method for obtaining an isolate or culture of a dinoflagellate from a natural aquatic sample, said method comprising adding mimosine or a toxic degradative product thereof to a natural aquatic sample comprising one or more dinoflagellate cells, incubating the mixture thus obtained until cell multiplication of the desired dinoflagellate is evident, isolating therefrom one or more cells of the desired dinoflagellate, transferring said one or more cells to a growth medium containing mimosine or a toxic degradative product thereof, incubating the mixture thus obtained until cell multiplication of the desired dinoflagellate is evident and, if necessary, transferring the enriched culture to fresh medium containing mimosine or a toxic degradative product thereof and repeating the sub-culturing of said enriched culture, until an isolate or culture of the required purity of the desired dinoflagellate is obtained.

19. The method of claim 18, wherein mimosine or 3,4-dihydroxypyridine is added to said natural aquatic sample and said growth medium.

20. The method of claim 18, wherein mimosine or a toxic degradative product thereof is present in said natural aquatic sample and said growth medium at a concentration of from 0.001 mM to 50 mM.

21. The method of claim 18, wherein mimosine or a toxic degradative product thereof is present in said natural

aquatic sample and said growth medium at a concentration of from 0.01 mM to 20 mM.

22. The method of claim 18, wherein mimosine or a toxic degradative product thereof is present in said natural aquatic sample and said growth medium at a concentration of from 0.1 mM to 10 mM.

23. The method of claim 18, wherein mimosine or a toxic degradative product thereof is present in said natural aquatic sample and said growth medium at a concentration of from 1 to 5 mM.

24. The method of any one of claims 18 to 23, wherein from 1 to 3 rounds of transfer and sub-culturing of the desired dinoflagellate are performed.

25. The method of any one of claims 18 to 23, wherein each round of sub-culturing from said transfer to the point where cell multiplication of the desired dinoflagellate is evident is from 3 to 10 days.

26. The method of any one of claims 18 to 23, wherein each round of sub-culturing from said transfer to the point where cell multiplication of the desired dinoflagellate is evident is from 4 to 7 days.

27. An isolate or culture of a dinoflagellate obtainable by a method according to any one of claims 1 to 26.

28. A method for the isolation of a chemical compound produced by a dinoflagellate comprising selectively enhancing

the growth of the population of said dinoflagellate by incubating a medium containing at least one cell of said dinoflagellate in the presence of mimosine or a toxic degradative product thereof, and isolating from the medium containing the dinoflagellate population thus obtained the desired chemical compound.

29. The method of claim 28, wherein said at least one dinoflagellate cell is incubated in the presence of mimosine or 3,4-dihydroxypyridine.

30. The method of claim 28, wherein mimosine or a toxic degradative product thereof is present in said medium at a concentration of from 0.001 mM to 50 mM.

31. The method of claim 28, wherein mimosine or a toxic degradative product thereof is present in said medium at a concentration of from 0.01 mM to 20 mM.

32. The method of claim 28, wherein mimosine or a toxic degradative product thereof is present in said medium at a concentration of from 0.1 mM to 10 mM.

33. The method of claim 28, wherein mimosine or a toxic degradative product thereof is present in said medium at a concentration of from 1 to 5 mM.

34. A method for the isolation of a chemical compound produced by a dinoflagellate, said method comprising selecting one or more dinoflagellate cells from a sample, placing said dinoflagellate cell or cells in a growth medium

containing mimosine or a toxic degradative product thereof, incubating the mixture thus obtained until cell multiplication of the desired dinoflagellate is evident and, if necessary, transferring the enriched culture to fresh medium containing mimosine or a toxic degradative product thereof and repeating the sub-culturing of said enriched culture, until a culture of the desired dinoflagellate of suitable purity is obtained, and isolating from said culture of the desired dinoflagellate thus obtained the desired chemical compound.

35. The method of claim 34, wherein said one or more dinoflagellate cells is incubated in the presence of mimosine or 3,4-dihydroxypyridine.

36. The method of claim 34, wherein mimosine or a toxic degradative product thereof is present in said growth medium at a concentration of from 0.001 mM to 50 mM.

37. The method of claim 34, wherein mimosine or a toxic degradative product thereof is present in said growth medium at a concentration of from 0.01 mM to 20 mM.

38. The method of claim 34, wherein mimosine or a toxic degradative product thereof is present in said growth medium at a concentration of from 0.1 mM to 10 mM.

39. The method of claim 34, wherein mimosine or a toxic degradative product thereof is present in said growth medium at a concentration of from 1 to 5 mM.

40. The method of any one of claims 34 to 39, wherein from 1 to 3 rounds of transfer and sub-culturing of the desired dinoflagellate are performed.

41. The method of any one of claims 34 to 39, wherein each round of sub-culturing from said transfer to the point where cell multiplication of the desired dinoflagellate is evident is from 3 to 10 days.

42. The method of any one of claims 34 to 39, wherein each round of sub-culturing from said transfer to the point where cell multiplication of the desired dinoflagellate is evident is from 4 to 7 days.

43. A method for the isolation of a chemical compound produced by a dinoflagellate, said method comprising adding mimosine or a toxic degradative product thereof to a natural aquatic sample comprising one or more dinoflagellate cells, incubating the mixture thus obtained until cell multiplication of the desired dinoflagellate is evident and, if necessary, transferring the enriched culture thus obtained to fresh medium containing mimosine or a toxic degradative product thereof and repeating sub-culturing of said enriched culture, until a culture of the required purity of the desired dinoflagellate, and isolating from said culture of the desired dinoflagellate thus obtained the desired chemical compound.

44. The method of claim 43, wherein said one or more dinoflagellate cells is incubated in the presence of mimosine or 3,4-dihydroxypyridine.

45. The method of claim 43, wherein mimosine or a toxic degradative product thereof is present in said growth medium at a concentration of from 0.001 mM to 50 mM.

46. The method of claim 43, wherein mimosine or a toxic degradative product thereof is present in said growth medium at a concentration of from 0.01 mM to 20 mM.

47. The method of claim 43, wherein mimosine or a toxic degradative product thereof is present in said growth medium at a concentration of from 0.1 mM to 10 mM.

48. The method of claim 43, wherein mimosine or a toxic degradative product thereof is present in said growth medium at a concentration of from 1 to 5 mM.

49. The method of any one of claims 43 to 48, wherein from 1 to 3 rounds of transfer and sub-culturing of the desired dinoflagellate are performed.

50. The method of any one of claims 43 to 48, wherein each round of sub-culturing from said transfer to the point where cell multiplication of the desired dinoflagellate is from 3 to 10 days.

51. The method of any one of claims 43 to 48, wherein each round of sub-culturing from said transfer to the point where

cell multiplication of the desired dinoflagellate is from 4 to 7 days.

52. The method of any one of claims 28 to 51, wherein said chemical compound is a bioactive compound.

53. The method of any one of claims 28 to 51, wherein said chemical compound is a channel modulator or a protein phosphatase inhibitor.

54. The method of any one of claims 28 to 51, wherein said chemical compound is selected from the group consisting of saxitoxins, maitotoxins, okadaic acid, carbenolides and amphinolides.

55. The method of any one of claims 28 to 51, wherein said chemical compound is a polyunsaturated fatty acid.

56. The method of any one of claims 28 to 51, wherein said chemical compound is an omega-3 fatty acid.

57. The method of any one of claims 28 to 51, wherein said chemical compound is docosahexaenoic acid.

58. A chemical compound produced by a dinoflagellate obtainable by a method according to any one of claims 28 to 57.

59. A method for identifying the dinoflagellate responsible for causing a red tide comprising adding mimosine or a toxic degradation product thereof to a sample obtained from said red tide comprising one or more dinoflagellate cells, incubating the mixture thus obtained until cell

multiplication of the dinoflagellate is evident and, if necessary, transferring the enriched culture thus obtained to fresh medium containing mimosine or a toxic degradative product thereof and repeating sub-culturing of said enriched culture, until a culture of sufficient purity to identify the dinoflagellate causing the red tide is obtained.